

AF

Projects Summary: Biosolids dewatering system



Overview

Southern Water Services Limited (SW) is a private utility company, responsible for providing drinking water and wastewater services across the South East of the UK. SW supply drinking water to approximately 1 million households from 83 water treatment works as well as being responsible for the collection and treatment of 718 million litres of wastewater at 365 treatment works through a network of 2,375 pumping stations.

Portswood wastewater treatment works (WwTW) is a liquid sludge producing site based in Southampton. The driver for this project was to eliminate the use of a barge to transport the liquid sludge off site via the River Itchen by generating a dry cake for transport offsite via road for further treatment. This scheme was delivered as an initiative through SW's Optimisation Team to reduce the treatment costs at the site.

Project: Biosolids dewatering system
Client: Southern Water
Site: Portswood wastewater works
Sector: Water

Project Summary

The scope of this project was for AFECO to design, manufacture, install, test and commission a complete biosolids dewatering system to convert SW's Portswood WwTW into a sludge cake producing site. The full scope of AFECO's contract included:

- Principal Designer under CDM, responsible for detailed design of the complete works
- Principal Contractor under CDM, responsible for all site set up and safety, site and subcontractor management, installation, testing, commissioning, training and paperwork
- Construction of a new hard standing to house the dewatering equipment, including piling of the area, plinths, footpaths and road crossing
- Supply and installation of all equipment, including sludge screen on platform, 2 no. centrifuges on platform with enclosures, polymer dosing system, loading cells, potable water and final effluent booster systems, 3 no. GRP kiosks, MCC, pumps, sludge tank refurbishment, drainage pump station
- Installation of all pipework, above and below ground, lagging and trace heating
- Integration with existing site SCADA and telemetry

Services Provided

Our responsibilities included the provision of detailed engineering design and installation services, including:

Engineering design

We undertook all elements of the project detailed design as Principal Designer under CDM 2015, from writing the control philosophy of the system through to detailed mechanical, electrical and ICA design, including the selection of the most appropriate equipment to align with the clients Specifications and performance criteria

CAD drawings

We produced detailed drawings for the construction of the project and on completion as As-Built's, using AutoCAD, including P&ID's, general arrangement and electrical drawings

Project and programme management

We were responsible for all elements of the project, including programme preparation and updating, risk and project management, regular reporting to the Client, site progress and sub-contractor review meetings

Site management

As Principal Contractor under CDM 2015, we directly managed all site activities, including site set-up, preparation and maintenance of the Construction Phase SHE Plan and other safety requirements, as well as directly managing all works and sub-contractors

Construction and installation

We carried out all M&E installation and civil works required for this project including groundworks and piling, temporary works, plinths, pipework, trenching, ducting and containment and equipment installation

Commissioning and testing

Prior to delivery to site, we undertook Factory Acceptance Testing (FAT) of the MCC and major items of plant as well as on site testing and commissioning before successfully completing performance testing with regular Client commissioning meetings

Operator training

To complete the Contract, we prepared a Training Programme and Manual, delivering on-site training for the Operational team around their shift patterns

Key Services Provided

Mechanical engineering and design

Electrical and ICA engineering and design

Principal Designer under CDM 2015

Principal Contractor under CDM 2015

Site management, installation and commissioning

About us

AFECO is a dynamic, specialist engineering services provider focussed on servicing our clients immediate and future needs.

Specialising in the water and marine sectors, our comprehensive range of professional services, solutions and products enable us to provide our clients with a complete and integrated project delivery and support service, whether providing expert advice or a complete design, installation, commissioning and optimisation service.

We operate under the control of our ISO9001, ISO14001 and ISO45001 UKAS accredited management systems, reflecting our commitment to consistently provide the highest standards safely every time.

To find out more about us visit our website at www.afeco.co.uk, contact us at info@afeco.co.uk or talk to one of our team on +44(0) 2392 267322.